Master's degree in Mining Engineering

The **master's degree in Mining Engineering** (**master's degree website**) provides specialised training in sustainable approaches to locating, extracting and exploiting minerals and energy resources. Students also learn about designing, modelling, planning and supervising mining operations; exploring, researching, modelling and assessing geological deposits; the advanced use of explosives; underground spatial management; surveying; advanced mineral processing; etc.

GENERAL DETAILS

Duration and start date

1.5 academic years, 90 ECTS credits. Starting September and February

Timetable and delivery

Afternoons. Face-to-face

Fees and grants

Approximate fees for the master's degree, **excluding other costs** (does not include non-teaching academic fees and issuing of the degree certificate):
€1,661 (€9,496 for non-EU residents).
More information about fees and payment options
More information about grants and loans

Language of instruction

Check the language of instruction for each subject in the course guide in the curriculum.

Information on language use in the classroom and students' language rights.

Location

Manresa School of Engineering (EPSEM)

Official degree

Recorded in the Ministry of Education's degree register

ADMISSION

General requirements

Academic requirements for admission to master's degrees

Places

30

Pre-enrolment

Pre-enrolment period open.
Expected deadline: 05/07/2024.

How to pre-enrol

Enrolment

How to enrol

Legalisation of foreign documents

All documents issued in non-EU countries must be legalised and bear the corresponding apostille.

DOUBLE-DEGREE AGREEMENTS

Double-degree pathways with other UPC schools

Master's degree in Mining Engineering + Master's degree in Geotechnical Engineering (ETSECCPB)

PROFESSIONAL OPPORTUNITIES

Professional opportunities

Graduates may seek technical and management positions in companies involved in exploiting mineral and energy resources, or in activities related to locating and evaluating mineral deposits, underground works, boring and mining facilities, maintenance of facilities, and environmental impact studies. They are also qualified to manage projects that involve the extraction, transportation and storage of resources based on application of mineralogical and metallurgical technologies. Career opportunities are mainly in the mining sector, civil engineering, and broader sectors in which mining engineers may be involved in carrying out studies related to environmental impact, environmental consultancy, occupational safety, organisation and quality control.

Competencies

Generic competencies

Generic competencies are the skills that graduates acquire regardless of the specific course or field of study. The generic competencies established by the UPC are capacity for innovation and entrepreneurship, sustainability and social commitment, knowledge of a foreign language (preferably English), teamwork and proper use of information resources.

Specific competencies

On completion of this master's degree, the students will:

- Have learnt to explore, investigate, model and evaluate geological resource deposits.
- Know how to plan, design, inspect and supervise mines and other geological resources.
- Be able to plan and manage the generation, transport, distribution and use of energy resources.
- Be equipped to carry out land management studies and studies of underground spaces.
- Know how to plan, design and manage mining facilities and metallurgical, iron and steel and construction material industries.
- Be capable of planning, performing studies and designing groundwater collection facilities, and of managing, exploring, researching and exploiting mineral and thermal waters.
- Have learnt how to design and execute facilities for the transport, distribution and storage of solids, liquids and gases.
- Have acquired the ability to environmentally assess and manage projects, plants and facilities.
- Be equipped to design and execute water treatment and waste management procedures for urban, industrial and dangerous waste.
- Know how to design and execute underground tunnels, works and spaces.
- Be capable of designing, managing and supervising the manufacture, transport, storage, handling and use of explosives and fireworks.
- Be familiar with techniques related to business management and employment law.

ORGANISATION: ACADEMIC CALENDAR AND REGULATIONS

UPC school

Manresa School of Engineering (EPSEM)

Academic coordinator

Lluís Sanmiquel

Academic calendar

General academic calendar for bachelor’s, master’s and doctoral degrees courses

Academic regulations

Academic regulations for master's degree courses at the UPC

CURRICULUM

Subjects	ECTS credits	Type
FIRST SEMESTER		
Economy of the Mining Company	5	Compulsory
Geological and Energy Resources Management	5	Compulsory
Land and Underground Space Management	5	Compulsory
Mining Machines	5	Compulsory
Modeling in Mineral Processing	5	Compulsory
Modelling and Assessment of Geological Resources	5	Compulsory
SECOND SEMESTER		
Blasting Modeling	5	Compulsory
Environmental Mining Engineering	5	Compulsory
Minerals Engineering	5	Compulsory
Mining Desing and Modeling	5	Compulsory
Modeling of Underground Excavations	5	Compulsory
Numerical Methods Applied to Mining Engineering	5	Compulsory
THIRD SEMESTER		
Geological and Mining Heritage Management	5	Optional
Integrated Management Systems	5	Optional
Materials' Engineering	5	Optional
Mineral Processing Plants	5	Optional
Mining Geophysics	5	Optional
Recycling of Solid Waste	5	Optional
Remote Sensing	5	Optional
Renewables Energies	5	Optional
Statistical Methods in Mining	5	Optional
Underground Electrification	5	Optional
Viability Studies	5	Optional
Waste Treatment and Mining Pollution Soils	5	Optional
Master's Thesis	15	Project